

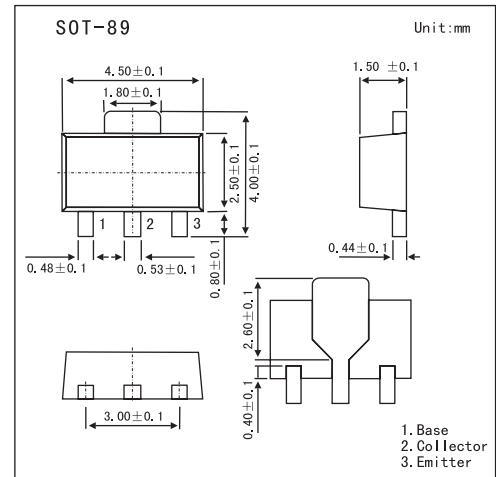
NPN Silicon Power Switching Transistor

FCX1047A

■ Features

- 2W power dissipation.
- 20A peak pulse current.
- Excellent HFE characteristics up to 20 Amps.
- Extremely low saturation voltage E.g. 25mv Typ.
- Extremely low equivalent on-resistance.

$R_{CE(sat)}$ 40m Ω at 4A.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	35	V
Collector-emitter voltage	V_{CEO}	10	V
Emitter-base voltage	V_{EBO}	5	V
Continuous collector current	I_{CM}	20	A
Peak pulse current	I_C	4	A
Power dissipation	P_{tot}	1	W
Operating and storage temperature range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

FCX1047A

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A$	35			V
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	$I_C=10mA$	10			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A$	5			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=20V$		0.3	10	nA
Collector Emitter Cut-Off Current	I_{CES}	$V_{CE}=20V$		0.3	10	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4V$		0.3	10	nA
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C=0.5A, I_B=10mA$ $I_C=1A, I_B=10mA$ $I_C=3A, I_B=15mA$ $I_C=4A, I_B=50mA$ $I_C=5A, I_B=25mA$		25 50 140 160 220	40 70 200 240 350	mV
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C=4A, I_B=50mA$		920	1000	mV
Base-emitter ON voltage *	$V_{BE(on)}$	$I_C=4A, V_{CE}=2V$		860	950	mV
Static Forward Current Transfer Ratio *	h_{FE}	$I_C=10mA, V_{CE}=2V$ $I_C=0.5A, V_{CE}=2V$ $I_C=1A, V_{CE}=2V$ $I_C=4A, V_{CE}=2V$ $I_C=5A, V_{CE}=2V$ $I_C=20A, V_{CE}=2V$	280 290 300 200 200 60	430 440 450 350 330 110		
Transitional frequency	f_T	$I_C=50mA, V_{CE}=10V, f=50MHz$		150		MHz
Output capacitance	C_{obo}	$V_{CB}=10V, f=1MHz$		85		pF
Turn-on time	$t_{(on)}$	$I_C=4A, V_{CC}=10V$		130		ns
Turn-off time	$t_{(off)}$	$I_{B1}=I_{B2}=40mA$		230		ns

* Pulse test: $t_p = 300 \mu s$; $d \leq 0.02$.

■ Marking

Marking	047
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